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PALOMAR AMATEUR RADIO CLUB

September 2022 SCOPE Newsletter

September 2022 General Meeting NTS and Radio Programming/Antenna Testing/Social

Please join us at 19:00 on Wednesday, September 6th for pre-meeting social time
19:30 for the start of the meeting, club announcements, followed by our program

The Zoom link is:

<https://zoom.us/j/98736897490>

Meeting ID: 987 3689 7490

Passcode: 001960

Come join us for pizza and soda!

First we will talk about the NTS, and have a quick exercise, then test your radios and antennas with a spectrum analyzer, network analyzer, and a PC connected to them for printouts. The PC will also have Chirp software and some of the radio interface cables for programming memories in handhelds. We are hoping that everyone will bring their radios and antennas that they want to check out. PARC Board Member Mark Raptis will set up one of the Yaesu Fusion repeaters in the back of the room for everyone to view and try operating.

Look forward to seeing all of you on the 6th!

August General Meeting Recap

August presentation slideshow is at <http://tiny.cc/btech>

And the full video is at <https://youtu.be/8t1Bg30OyUY>

And related to the August presentation, Phil KA9Q has three KiwiSDRs that people are free to use: <http://kiwisdr.ka9q.net:8073> (phil's house), <http://kiwisdr.ucsd.edu:8073> (KK6UC shack @ UCSD) and <http://kiwisdr.w6sun.club:8773> (Mount Carmel HS ARC)

Our presenter Anthony K8TZ has many of his other presentations available at <http://tiny.cc/k8zt-p>

Lastly RATPAC has a lot of presentations mostly on emergency communications at this link <http://tiny.cc/ratpac-list>

Upcoming Events Annual Club Picnic Saturday, September 3rd 2022

Members of Palomar Amateur Radio Club, and HAM Friends in the community! Join Palomar Amateur Radio Club for a fun day of radio, T-Hunting, food, and rag - chewing at San Dieguito Park, in our usual area #4, on Saturday, September 03, 2022.



Hamburgers, Hot dogs, and Veggie burgers will be provided, along with the fixins, plates, and flatware.

Members and guests are asked to bring an item from the following list based on their last name:

A-K Side dish or casserole

L-R Salad vegetables or fruit

S-Z Dessert

We will also hold our yearly participation drawing for some fun prizes, and see some show-and-tell to include your boat-anchor radios and new toys or projects you might be working on, feel free to bring items to show off!

Park opens at 09:30, some of us will be getting there to set up.

Lunch is around 11:45, T-Hunts will be ongoing, and our SPECIAL GUEST the US Coast Guard Auxiliary will be on-site with their new Command and Control trailer to show off!

Area 4 is just inside the Highland Dr entrance, turn Left at the first street past the gate, and immediately Left again down the hill past the maintenance buildings.

Picnic area under coverings on your right, playground and restrooms are nearby!

GoFundMe for Dan's Celebration of Life



Photo of Joy and Dan

Dan was a most conscientious and helpful guy and very cheerful and supportive to hams he met on the air and when running his daily net at 12:30pm on the 146.730 repeater. Please consider helping Dan's son Matt and family give Dan a proper and distinctive sendoff from this life.

73, Dennis Vernacchia N6KI

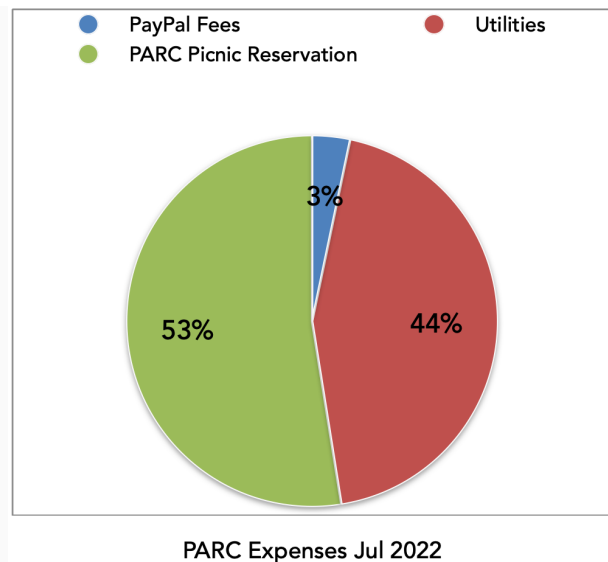
<https://www.gofundme.com/f/scs2qe-dans-celebration-of-life>

Membership Report

Please keep an eye on your email for direct updates from your Membership Chair, Glen AI6RR, for updates about your individual membership status and renewal dates. You can always [reach out to him directly](#) or [Check Your Membership](#) on the website.

Financial Report

Palomar Amateur Radio Club Statement of Activity by Month 7/1/2022 - 7/31/2022		
	7/31/2022	Total
Revenue		
PayPal Sales	175.00	175.00
Sales	305.00	305.00
Other (Interest)	4.76	4.76
Total Revenue	\$ 484.76	\$ 484.76
Gross Profit	\$ 484.76	\$ 484.76
Expenditures		
PayPal Fees	8.55	8.55
Utilities	114.60	114.60
PARC Picnic Reservation	136.25	136.25
Total Expenditures	\$ 259.40	\$ 259.40
Net Operating Revenue	\$ 225.36	\$ 225.36
Net Revenue	\$ 225.36	\$ 225.36



Open Research institute at DEFCON 30

by Michelle Thompson W5NYV



Open Research Institute's amateur radio open source showcase at the annual hacker convention DEFCON was located in RF Village (RF Hackers Sanctuary) in The Flamingo Hotel. A volunteer crew of seven people from three US states staffed the exhibit that ran from Friday 12 August to Sunday 14 August 2022.

RF Village hosts a very popular wireless Capture the Flag (CTF) event. It is a top tier contest at DEFCON and the winners are recognized at closing ceremonies. RF Village also has a peer-reviewed speaking track. See previous talks in the YouTube playlists here: <https://www.youtube.com/c/RFHackersSanctuary>

RF Village generously offers space for exhibits from the community. For 2022, the exhibits included Open Research Institute, Kent Britain PCB Antennas, Alexander Zakharov (ALFTEL Systems Ltd.), and Starlink (SpaceX). Starlink brought two stations and allowed visitors to experiment with network and physical security.

Total attendance at DEFCON 30 was estimated at 27,000. Conference events were held in the new Caesar's Forum + Flamingo, Harrah's, and Linq convention centers.

Open Research Institute's exhibit had multiple parts. The entry to the exhibit was a poster session. Posters presented were ITAR/EAR Regulatory Relief for Amateur Satellite Service, Libre Space Foundation's Manifesto, Authentication and Authorization Protocol for Amateur Satellites, and the Ribbit Project Introduction and Architecture.

All posters were enthusiastically well-received. Specific technical feedback was received on the Authorization protocol that will improve the design. There will be a presentation about the Authorization and Authentication protocol at the September 2022 QSO Today Ham Expo.

Visitors understood the purpose and potential of Ribbit and could download the free open source Android app from a QR code on the poster. The code was also on the Ribbit stickers handed out at the booth. All 300 of the Ribbit stickers were handed out by Sunday morning. Ribbit allows an amateur operator to type in SMS messages on an Android app. Each SMS message is converted to digital audio tones. The tones are played out the phone's speaker into the microphone of an amateur radio handheld or mobile rig. This can turn any analog HT into part of a digital messaging network. The app can do point-to-point communications and also has a repeater mode.

Find the Ribbit "Rattlegram" application here: <https://play.google.com/store/apps/details?id=com.aicodix.rattlegram>

There will be a Ribbit presentation at the September 2022 QSO Today Ham Expo.

The ITAR/EAR Open Source amateur satellite regulatory relief poster garnered a lot of attention. A very large fraction of DEFCON attendees are familiar with ITAR/EAR, which are a set of regulations that govern the way we design communications satellites in the USA. People that read the poster at DEFCON understood and appreciated the value of the work, which provides long-awaited regulatory relief for the amateur satellite service. The poster presentation lead to an invitation to Policy Village Sunday afternoon for a panel session hosted by the Office of the National Cyber Director. Summary of that session can be found in ORI's 19 August 2022 project report. The ITAR/EAR poster will be part of the projects display at the September 2022 QSO Today Ham Expo.

Foot traffic flowed past the posters and into the live demonstrations.

The first live demonstration visitors encountered was from OpenRTX (<https://openrtx.org>). This demonstration used a tablet computer running OpenWebRX to display modified MD-380 transmissions. Visitors could use headphones to hear live transmitted signals. Posters at the table explained the modifications required to implement the M17 protocol on the MD-380 and also

described the motivation and value of the work, with an emphasis on the use of the free and open CODEC2 voice codec. The use of CODEC2 in M17 replaces the proprietary AMBE codec found every other digital voice protocol for VHF/UHF ham radio. There was strong interest in both the M17 and the DMR work from OpenRTX, broad understanding of why proprietary codecs are not ideal, and consistently positive feedback. 500 OpenRTX business cards were printed with QR codes for the OpenRTX website and nearly all of them were handed out.

The second demonstration was Opulent Voice. This is a high bitrate open source voice and data protocol. It's designed as the uplink protocol for ORI's amateur satellite program. The Authentication and Authorization fields are built in and sending data does not require a separate packet mode. The baseline voice codec for Opulent Voice is OPUS at 16 kbps. Higher bitrates are a build-time option. For the DEFCON demonstration, Opulent Voice was transmitted from an Analog Devices PLUTO SDR and received on an RTL-SDR/Raspberry Pi. Visitors could use headphones to listen to the received audio. The modulator and demodulator code can be found at <https://github.com/phase4ground/opv-cxx-demod>. 300 custom art stickers for Opulent Voice were ordered and all were handed out.

The two demonstrations compared and contrasted voice quality (3.2 kbps vs 16+ kbps), regulatory limitations (VHF/UHF vs. microwave), and approach to framing (P25 style vs. COBS/UDP/RTP).

The next station had stickers, buttons, patches, ORI's Tiny CTF, Haifuraiya proposal printouts, and a Trans-Ionospheric badge display. See <https://www.openresearch.institute/badge>

ORI's "Tiny CTF" was a hidden web server, accessible from the wifi access point located at the OpenRTX demonstration. The access point allowed people to view the OpenWebRX display directly on their connected devices. Participants that found the hidden web server and then blinked the LEDs on a certain piece of equipment at the booth received a prize.

Haifuraiya (High Flyer) is an open source highly elliptical orbit communications satellite proposal. Microwave amateur band digital communications at 5, 10, and 24 GHz are proposed. Transmissions are frequency division multiple access Opulent Voice up, and DVB-S2/X time division multiplexed down. A presentation about this proposal will be at the September 2022 QSO Today Ham Expo.

Based on the feedback about the Trans-Ionospheric, ORI will update and build another round of these badges. Round one of the Trans-Ionospheric badge was a very successful fundraiser. The badges have been enduringly popular in the community, and they can serve as radio peripherals that display link and payload health over bluetooth. The artistic design of the badge is based on the front panel of the Zenith Trans-Oceanic radio.

There were very high levels of interest, enthusiasm, and positive feedback throughout the

weekend. Friends from Ham Radio Village and Aerospace Village visited the booth and shared their experiences, the organizational support from RF Village leads was excellent, and ORI will return to DEFCON in 2023 with another round of open source digital radio work to share.

Planning for 2023 has started - there will be a google document for coordinating and regular "help wanted" updates. The top priority? Live over-the-air technical demonstrations.

Thank you to everyone that made this past weekend turn out so well. It took a lot of people around the world to make it happen. You are all appreciated.

Want to be involved? Everyone is welcome. We are organized under an industry-standard code of conduct and have developer and participant policies on the website.

See <https://openresearch.institute/getting-started> to get on board.

Good work being done on the repeaters!

by Joseph Peterson K6JPE

Palomar Amateur Radio Club continues to pride itself in service to the community, this is evident in the ongoing use of the repeaters on a regular basis to help local emergency response groups, like CERT, ARES, Red Cross, and others, to hone their on-air practices, remain comfortable in talking on the repeats, and ensure their equipment is operating properly. Please check out the new Net Calendars at palomararc.org/nets and listen in, or better yet, check in as a guest to the nets, they would be happy to answer any questions you may have.



Here are the statistics from just the Carlsbad CERT AUXCOM Net, which meets every Monday starting at 20:00 on the 146.730 repeater. For the months of June and July a total average of 16 CERT Members and 5 visitors met each week, with as many as 21 CERT Members on the June 6th net. We want to extend our thanks to the following individuals who make this net possible.

Kim Young, Assistant Director of Emergency Services, Carlsbad

Marie Jones-Kirk, Emergency Services Manager, Carlsbad

And all the Net Control Operators who rotate on a weekly basis

Richard KN6CIG, Tom KM6KSC, Janell KJ6TOF, Dave KD6DH, and Aidan KN6EJM

Please see below for the full report from Dave.

5-August 2022

Kim Young, Assistant Director of Emergency Services, Carlsbad

Marie Jones-Kirk, Emergency Services Manager, Carlsbad

Board of Directors, Palomar Amateur Radio Club

To provide ongoing training and ensure the readiness and proper operation of the repeater system and individual stations, the Carlsbad CERT Auxiliary Communications Team (AUXCOM) holds its amateur radio nets each Monday at 8 pm using PARC's 146.730 MHz analog repeater on Palomar Mountain. Our repeater nets start at 8 pm Mondays, vary in length, and are always concluded by 8:30 pm. We follow each repeater net with a net on our Simplex frequency (144.465 MHz). We stand down on holidays or on the Monday following a holiday as appropriate.

We thank PARC for our use of their repeater and report our usage below:

Nets in June and July 2022:

Monday 6/6/22

CERT on repeater - 21

**Guests on repeater - 6
CERT on Simplex - 16
Net Control - Richard KN6CIG**

Monday 6/13/22

CERT on repeater - 15

**Guests on repeater - 4
CERT on Simplex - 14
Net Control - Robert N2PNZ**

Monday 6/20/22

CERT on repeater - 17

**Guests on repeater - 3
CERT on Simplex - 17
Net Control - Tom KM6KSC**

Monday 6/27/22

CERT on repeater - 19

**Guests on repeater - 7
CERT on Simplex - 18
Net Control - Janell KJ6TOF**

Monday 7/11/22

CERT on repeater - 13

**Guests on repeater - 5
CERT on Simplex - 13
Net Control - Robert N2PNZ**

Monday 7/18/22

CERT on repeater - 16

**Guests on repeater - 4
CERT on Simplex - 15
Net Control - Dave KD6DH**

Monday 7/25/22

CERT on repeater - 15

**Guests on repeater - 8
CERT on Simplex - 15
Net Control - Aidan KN6EJM**

Classifieds

Wild Bill WB6BFG <wb6bfg@gmail.com> has a tower trailer for sale

He is willing to let it go for a very fair price, and it includes 8x12 foot trailer with 40 foot crank up and all the antennas... Contact Bill for further info



Your Board of Directors

Call Sign.	Name.	Position
K6JPE	Joe	President
KD9LF	Chris	Vice-President
W6TQS	Jim	Secretary
K2VO	Jim	Treasurer
AI6RR	Glen	<i>Membership Chair</i>
AJ6FQ	Ron	Director #1
W6XM	John	Director #2
KM6CXW	Keith	<i>Scope Editor</i>
KF6WTN	Mark	<i>Repeater Chair</i>
NN3V	Charlie	Site Chair

[Member Satisfaction Survey](#)

Scope Articles/Content

Please submit articles or content to scope@palomararc.org if you have done something interesting please share with us!
We'd love to see your HAM shacks, mobile rigs, hiking rigs, stories about your hikes or expeditions, anything you think other club members may be interested in reading about.

[Donate](#)



SHOP NOW



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